

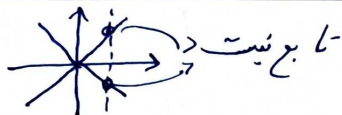
$$f = \{(1, a), (1, a^2 + 3), (2, 3a)\}$$

$$a = a^2 + 3$$

$$a^2 - 4a + 3 = 0 \xrightarrow{\text{جمع فرایب}} a < 3$$

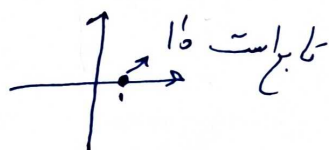
$$\text{الف) } |y| = |x|$$

$$\begin{cases} y = x \\ y = -x \end{cases}$$



$$\text{ب) } |y| + \sqrt{x-1} = 0$$

$$\begin{cases} y = 0 \\ x - 1 = 0 \rightarrow x = 1 \end{cases}$$



$$\text{الف) } |y-1| = \sqrt{x-2} \rightarrow y-1 = 2 \rightarrow y=3$$

$$y-1 = -2 \rightarrow y=-1$$

$$\text{ب) } y^2 - y = \frac{x^2}{2} \rightarrow 2y(y^2 - 1) = x^2 \rightarrow 2y(y^2 + 1)(y-1)(y+1) = x^2 = 0$$

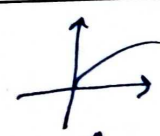
$$\text{ج) } \sin^2 x + \cos^2 \frac{y}{2} = 1 \xrightarrow{\text{اگر } x = \frac{\pi}{6}} \frac{1}{4} + \cos^2 \frac{y}{2} = 1 \rightarrow \cos^2 \frac{y}{2} = \frac{3}{4} \rightarrow \cos \frac{y}{2} = \pm \frac{\sqrt{3}}{2}$$

$$\text{د) } 2xy = x \xrightarrow{\text{اگر } x=0} y \in \mathbb{R} \xrightarrow{\text{مثال } x=0} y = 1, 2, 3, 4, \dots$$

$$\text{الف) } x^2 + |y-1| = 4x \rightarrow |y-1| = 4x - x^2$$

$$\text{ب) } y^2 + 3x = 0 \rightarrow y^2 = -3x \rightarrow y = \pm \sqrt{-3x}$$

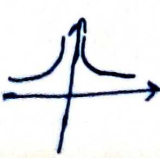
$$\text{الف) } y = \sqrt[4]{x} \xrightarrow{\text{فرد بزرگ}}$$



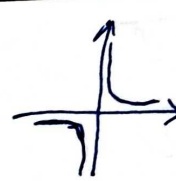
$$\text{ب) } y = \sqrt{x} \xrightarrow{\text{فرد بزرگ}}$$



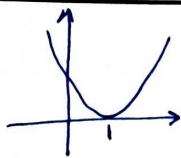
$$\text{د) } y = \frac{1}{x^4} \xrightarrow{\text{زوج}}$$



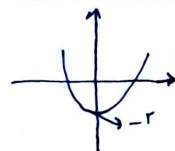
$$\text{ج) } y = \frac{1}{x^3} \xrightarrow{\text{فرد}}$$



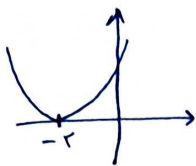
الف) $y = (x-1)^2$



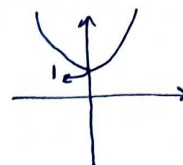
ج) $y = x^2 - 2$



ب) $y = (x+2)^2$

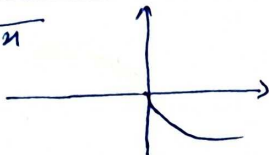


د) $y = x^2 + 1$

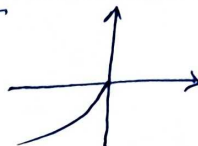


۶

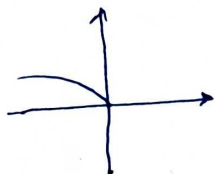
الف) $y = -\sqrt{x}$



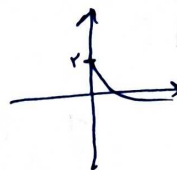
ج) $y = -\sqrt{x}$



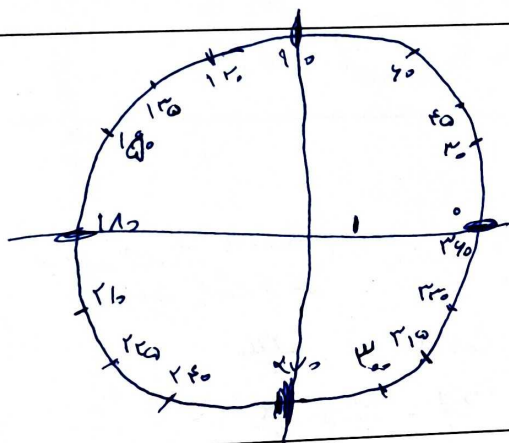
ب) $y = \sqrt{x}$



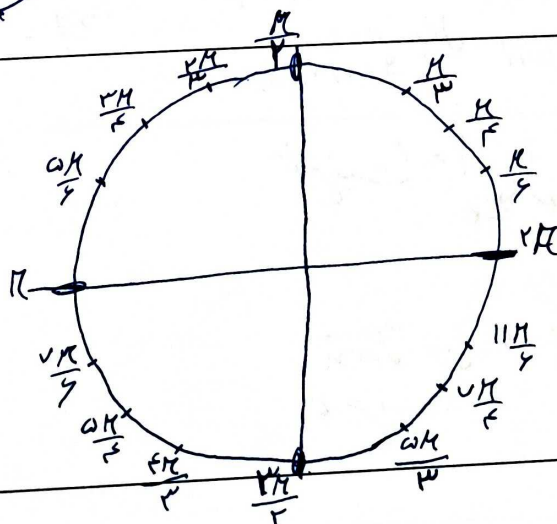
د) $y = -\sqrt{x+2}$



۷



۸



۹

الف) $\cos 120^\circ = -\frac{1}{2}$

ب) $\sin 150^\circ = \frac{1}{2}$

ج) $\cos \frac{5\pi}{3} = \frac{1}{2}$

د) $\sin \frac{11\pi}{4} = -\frac{1}{2}$

۱۰